

Project title: Evaluating ecological effects of stream restoration at Calera Creek

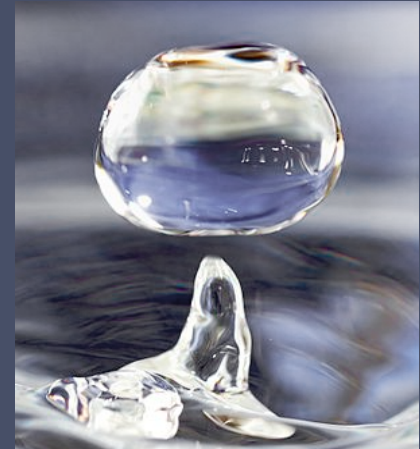


□ Research team members:

- Elyse Will – REU participant
- Janet Hsiao – Undergraduate researcher
- Justin Lawrence – Mentor
- Vincent Resh – Principal investigator

□ Study site:

- Calera Creek – Pacifica, California
 - Urban stream restoration project → recycled water discharged from Calera Creek Water Recycling Plant



□ Objective:

- Examine the effects of water quality on benthic macroinvertebrate (BMI) communities upstream and downstream of recycled water discharge at Calera Creek
 - Can upstream organisms survive in the water downstream?
 - Can downstream organisms survive in the water upstream?



□ Scope:

- Upstream : diverse community of ephemeroptera, plecoptera, trichoptera, odonata, diptera, isopoda
- Downstream: less diverse community, large proportion of amphipods (*Hyalella azteca*)
- Pillow cages: test response of BMI to water quality, while excluding predation and competition



□ Major outcomes of research:

- Stronger trend of BMI survival in water upstream
 - Upstream/downstream community structure not explained by biological effects (predation and competition)
- Possible factors impacting BMI distribution:
 - Water quality
 - Inconsistent flow regime: pulse releases from sequencing batch reactor at water recycling plant
 - Temperature difference: 12°C upstream, 18°C downstream

